(DN) lesions was evaluated in a randomized clinical trial with the JJIS stent; its value in patients with acute and threatened closure (AC/TC), and for saphenous vein graft (SVG) lesions was assessed in separate registries. To determine the early angiographic results of pts treated with the NIR stent we reviewed 1210 cineangiograms in the randomized trial and registries using quantitative methods (CMS-MEDIS). The final stent borders results are reported (Table).

	DN-NIR	DN-JJIS	AC/TC	SVG
Number	419	429	207	155
Reference, mm	2.98 ± 0.52	3.03 ± 0.53	2.79 ± 0.61	3.46 ± 0.70
Pre % Stenosis	65 ± 13	64 ± 13	70 ± 16	63 ± 18
Final % Stenosis	8 ± 10	9 ± 12	9 ± 12	6 ± 17

We conclude that the NIR stent achieves comparable final angiographic results to the JJIS in de novo lesions; comparable acute results were obtained in AC/TC and SVG subgroups. The follow-up restenosis rates in the randomized trial will be presented.

5:15

821-6 Randomized Comparison of Laser Guidewire and Mechanical Guidewires for Recanalization of Chronic Total Coronary Occlusions: the TOTAL Trial, Final Result and Follow-up at 30 Days

Patrick W. Serruys, Yvonne Teunissen. *On behalf of the TOTAL Study Investigators. Erasmus University Rotterdam, and Cardialysis Rotterdam, The Netherlands*

Background: Despite continuous improvement of mechanical guidewires (MW) for coronary angioplasty, chronic total occlusions (CTO) remain a true challenge. The Spectranetics laser wire (LW) combines mechanical attributes with the ablative energy of the CVX-300 excimer laser to facilitate the crossing of coronary total occlusions. The current study compared the laser wire to mechanical wires with respect to efficacy and safety. The primary endpoint was treatment success, defined as reaching the true lumen of any branch distal to the occlusion by the allocated W within 30 minutes of fluoroscopy time. A secondary endpoint was the cross-over treatment success (CXS), after initial failure with the allocated W.

Methods: Patients with angina and/or ischemia and an angiographically documented (≥ 1 month) TIMI 0 flow CTO were eligible for inclusion. A total of 305 patients (pts) were randomized to either LW or MW in 18 European centers. Angiographic exclusion criteria were the absence of any entry point or the inability to visualize the distal lumen through collateral circulation.

Results: In 305 pts (age 58.8 ± 10 yrs, previous MI in 56%) the mediananginographic age of occlusion was 9 weeks (range 4–269). The occlusion length (QCA) was 15 ± 9 mm. Treatment success, based on intention to treat analysis, was 47.5% with the MW and 53.1% with the LW (p = 0.33). The CXS was 45.5% after CX to LW and 27.3% after CX to MW, as a consequence the cumulative success in the LW arm was 61.4% and 66.3% in the MW arm. The average cumulative success was 63.9% (c.i. 58.5-69.3%), whereas the success rate after the initial and sole attempt with the MW was 47.5% (c.i. 39.8-55.2). Complications following the first attempt (death, MI, emergency CABG, tamponade) was 0% in the LW arm and 0.6% in the MW arm. At 1 Month, 90.3% of the LW pts and 90.0% of the MW pts were event free. LW pts vs MW pts: Death 0% vs 0.6%; MI 4.1% vs 2.5%; CABG 4.8% vs 6.9%; rePTCA 0.7% vs 0%.

Conclusion: Laser wire technology increases the crossing success rate from 47.5% (cath lab with MW only) to 63.9% (cath lab with laser wire technology), without increasing the risk of complications.

822 Stress Echocardiography: Assessment of Myocardial Viability

Monday, March 30, 1998, 4:00 p.m.–5:30 p.m.
Georgia World Congress Center, Room 360W

4:00

822-1 Viability Identification by Low Dose Pharmacological Stress Echo Predicts Favourable Left Ventricular Remodeling Very Early After Acute Myocardial Infarction

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Background: Myocardial stunning may cause a reversible left ventricular dysfunction after an acute myocardial infarction (AMI). Myocardial viability decreases ventricular remodeling.

Methods and Results: Thirty in-hospital patients with AMI (age 57 ± 11 years), all treated with thrombolytic therapy, underwent (17 ± 7 hours from symptoms onset) a 2-D echo study: 1 at baseline (REST); 2 with combined very low dose dipyridamole (0.28 mg/kg over 4') immediately followed by low dose dobutamine (5 μg/kg/min, in 5 (DIDO); 3 at follow-up (7 days from AMI) in 29 patients. A standard formula (Simpson's rule, applied to apical biplane projection) was adopted to quantify end-diastolic (EDV) and end-systolic (ESV) volumes. The wall motion score index (WMSI) was at baseline 1.79 ± 0.2. DIDO response identified myocardial viability as decrease of WMSI >0.18. At rest ESV was 46.53 ± 18.44 ml and EDV was 81.27 ± 23.42 ml. DIDO "responders" (n = 11) and "non responders" (n = 18) showed at study enter similar values of ESV (41.5 ± 8.7 ml vs. 49.4 ± 21.9 ml) and EDV (79.7 ± 11 ml vs. 82.2 ± 28.5 ml). At follow-up ESV decreased in "responders" (6.4 ± 8.9 ml) while increased in "non-responders" (6.2 ± 11.7 ml; p < 0.005); EDV was unchanged both in "responders" and in "non-responders".

Conclusions: Myocardial viability evaluated very early after AMI with low dose dipyridamole-dobutamine stress echo protects from early unfavourable left ventricular volumetric changes.

4:15

822-2 The Prognostic Value of Myocardial Viability Recognized by Low Dose Dipyridamole Echocardiography in Ischemic Chronic Left Ventricular Dysfunction

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The prognostic value of myocardial viability has been assessed only in small series, with retrospective analysis coming from single-centers and using low dose dobutamine as an inotropic stress. Aim of this study was to assess the prognostic value of myocardial "viability" recognized as a contractile response to vasodilator stimulation in a large scale, prospective, multicenter, observational study design. Thus, 240 patients (mean age 61 ± 9 years) with angiographically proven coronary artery disease, previous (>3 months) myocardial infarction and severe LV dysfunction (ejection fraction <35%; mean: 27 ± 9%) were enrolled in a large scale, prospective, multicenter, observational study. Ten laboratories that had passed quality control for stress echo reading entered the project. Each patient underwent low dose dipyridamole echo (0.28 mg/Kg in 4'). Myocardial viability was identified as an improvement ≥0.4 in wall motion score index, each segment scored from 1 = normal to 4 = dyskinetic in a 16 segment model of left ventricle. Patients were followed up for 6 ± 6 months (range 1 to 12 months). Seventy patients were revascularized: cardiac death occurred in none of the 10 patients with and in 7 of the 60 patients without myocardial viability (0 vs 18%). In the medically treated patients, cardiac death occurred in 1 out of the 13 patients with and in 13 out of the 156 patients without myocardial viability (7% vs 8%). Thus in severe LV ischemic dysfunction, the documentation of myocardial viability by low dose dipyridamole echo is associated with improved survival only in revascularized patients.

4:30

822-3 Contractile Reserve, Microvascular Integrity and Cell Membrane Integrity for Predicting Contractile Recovery After Recanalization in Acute Myocardial Infarction

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Low dose dobutamine stress echocardiography (DSE) can assess contractile reserve while Myocardial contrast echocardiography (MCE) and ^{201}TI SPECT (^{201}TI) can assess microvascular and cell membrane integrity. Which one is the best predictor of contractile recovery of the infarcted segment after recanalization of the infarct related artery (IRA) in acute myocardial infarction (AMI)? The aim of this study was to compare the role of contractile reserve, mirovascular integrity and cell membrane integrity in predicting contractile recovery. 16 patients with AMI underwent DSE, MCE and ^{201}TI shortly after recanalization of IRA without flow limiting residual stenosis. DSE was started with 5 ug/kg/min the increased up to 20 ug/kg/min. Regional wall motion was assessed with 16 segment model of ASE and wasll motion score (WMS) was graded as 1 (normal), 2 (mild to moderate hypokinesia), 3 (severe hypokinesia), 4 (akinesia), 5 (dyskinesia). The improvement of WMS more than 1 during DSE was considered to have contractile reserve. MCE was performed with intracoronary injection of sonicated Hexabrix (3–5 cc). MCE perfusion was graded by semi-quantitative score (0, 0.5, 1) with 16 segment model. The segments scored as 0.5 or 1 were considered to have microvascular integrity. Every patient underwent follow up echocardiography to assess the recovery of wall motion 1 month later. Out of 72